Multiple Groups Problem Situations

1. Solve each problem by drawing a diagram and writing an equation(s).
   - I am making 4 large pizzas and I have 3 pounds of cheese. If I want each pizza to have the same amount of cheese, how much cheese should I put on each pizza?

   - I am making 4 large pizzas. How much cheese do I need if I want to put $\frac{3}{4}$ pound of cheese on each?

   - I have 3 pounds of cheese. I want to put $\frac{3}{4}$ pound on each pizza I make. How many pizzas can I make?

2. What are the similarities and differences among the three word problems?

3. Complete the following table for each word problem.

Word Problem	Number of Groups	Size of Group	Total	Possible Equation(s)	Problem Type
I am making 4 large pizzas and I have 3 pounds of cheese. If I want each pizza to have the same amount of cheese, how much cheese should I put on each pizza?					
I am making 4 large pizzas. How much cheese do I need if I want to put $\frac{3}{4}$ pound of cheese on each?					
I have 3 pounds of cheese. I want to put $\frac{3}{4}$ pound on each pizza I make. How many pizzas can I make?					

Adapted from: Empson, S. B. and Levi, L. (2011). *Extending Children's Mathematics: Fractions & Decimals, Innovations in Cognitively Guided Instruction.* Portsmouth, NH: Heinemann.

Note: The three problems are Multiple Groups problems. A Multiple Group problem is one in which there is a whole number of groups and a fractional amount in each group where the fraction is not equal to a whole number. An Equal Sharing problem is one type of Multiple Group problem. The problems are also Equal Groups problems. An Equal Groups problem is a problem situation and matches row one of *Iowa Core Mathematics* Table 2.